

Amendments to the Specification:

Page 12, amend the paragraph beginning on line 14 to read as follows:

The reason for the above phenomenon was examined. The present inventors considered that the above phenomenon is due to a bad frequency response in the recording characteristic of the medium. Therefore, the cause was analyzed by performing a simulation through the use of a super computer, etc. and as a result, it became evident that there is a problem in thermal fluctuations of magnetization and spin damping during recording process. Therefore, studies were carried out on medium additives capable of optimizing thermal fluctuations and damping coefficient. As a result, the present inventors found out that by adding at least one element selected from a third group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Bi, Sb, Pb, Sn, Ge and B to the composition of the above medium, it is possible to reduce the absolute value of normalized noise coefficient per recording density to not more than 2.5×10^{-8} (μVrms) (inch) (μm)^{0.5}/(μVpp) even when recording is performed at 50 MB/s. This effect was observed when the above elements were added in amounts of not less than 0.1 at %. However, their addition in an amount of 0.1-1 at % is sufficient. Addition in amounts of not more than 0.1-15 at% was undesirable because of a remarkable decrease in output. Furthermore, the effect was remarkable when rare earth elements were added. The above effect was also ascertained in what is called a granular type medium in which a non-magnetic substance, such as SiO_2 and ZrO_2 , and a magnetic material with a high crystalline anisotropy constant, such as CoPt and CoNiPt, were simultaneously formed by sputtering and the magnetic material with a high crystalline anisotropy constant was precipitated and dispersed by heat treatment at a temperature of about 300°C to obtain the above composition. Furthermore, in a case where the above magnetic layer is made of an amorphous magnetic substance, the magnetic layer often has perpendicular anisotropy. However, the same effect was also observed in this case.

Furthermore, in any of these instances, when the above magnetic layer was formed via a non-magnetic intermediate layer containing at least one element selected from the group consisting of Cr, Mo, W, V, Nb, Ta, Zr, Hf, Ti, Ge, Si, Co, Ni, C and B as a primary component, noise could be remarkably reduced because of statistical addition of signals and this was especially favorable for noise reduction.

Furthermore, what is especially noteworthy is that by reducing the magnetic core length of the above magnetic head to not more than 50 μ m, a sharp and strong magnetic field could be generated with increased efficiency and recording on a medium with a higher coercive force was possible. This is preferable because higher densities can be obtained. Furthermore, by installing the above R/W-IC near the suspension, the rise time of a recording magnetic field could be made further shorter. This permitted sharp recording and enabled medium noise to be relatively reduced. Therefore, this is more preferable.